10/522,363

1-13. (CANCELED)

14. (CURRENTLY AMENDED) A method for controlling a drivetrain (1) in a vehicle, in particular an off-road vehicle, with a drive engine (2), a multi-range transmission (4) and a drive output, the multi-range transmission (4) consisting at least of an automatic transmission (8) and a downstream range transfer box (9) that can be shifted by means of shift elements (24, 25), when a transmission range of the range transfer box (9) is changed, a first shift element (24 or 25) of the range transfer box (9) that is to be engaged is synchronized by controlling shift elements (A to E) of the automatic transmission (8), such that the range change in the range transfer box can be, one of, carried out automatically or by generation of a voluntary driver's command at any vehicle speed; and

reducing a transmitting capability of shift elements of the automatic transmission (8) in order to adjust the connection speed (n mot a) of the engine (2) and when the connection speed (n mot a) of the drive engine (2) is established, causing the transmitting capability of the shift elements of the automatic transmission (8) to be disengaged, while operating shift elements to be engaged of a ratio in the automatic transmission (8) in a slipping condition.

- 15. (PREVIOUSLY PRESENTED) The method according to claim 14, wherein when the transmission range of the range transfer box (9) is changed, a transmission ratio of the automatic transmission (8) is changed in such manner that a ratio change of the multi-range transmission (4) is smaller than if the range of the range transfer box (9) alone had been changed.
- 16. (PREVIOUSLY PRESENTED) The method according to claim 14, wherein a range change takes place in the range transfer box (9) in response to the voluntary driver command.
- 17. (PREVIOUSLY PRESENTED) The method according to claim 14, wherein before the range of the range transfer box (9) is changed, a load on the drivetrain (1) is relieved by changing a torque (m_mot) of the drive engine (2).
- 18. (PREVIOUSLY PRESENTED) The method according to claim 14, wherein a rotation speed (n_mot) of the drive engine (2) is changed toward a connection

10/522,363

speed (n_mot_a) of a ratio to be produced in the multi-range transmission (4), at which the shift element (24 or 25) of the range transfer box (9) to be engaged is synchronized.

- 19. (PREVIOUSLY PRESENTED) The method according to claim 18, wherein the connection speed (n_mot_a) of the drive engine (2) is determined as a function of a transmission ratio to be englaged in the multi-range transmission (4) and of a vehicle speed (v_fzg), so that when the connection speed (n_mot_a) is reached an input speed on an engine side and an input speed of the shift element (24 or 25) of the range transfer box (9) to be engaged on an output side are equal.
- 20. (PREVIOUSLY PRESENTED) The method according to claim 18, wherein the shift elements (A to E) of the automatic transmission (8) are actuated in such manner as to adjust the connection speed (n_mot_a) of the drive engine (2).
 - 21-22. (CANCELED) |
- 23. (PREVIOUSLY PRESENTED) The method according to claim [22] 14, wherein the shift elements of the automatic transmission (8) and of the range transfer box (9) to be engaged are closed when in a synchronized condition.
- 24. (PREVIOUSLY PRESENTED) The method according to claim 14, wherein the change of range in the range transfer box (9) and an associated ratio change in the automatic transmission (8) are carried out when a voluntary driver command has been used.
- 25. (PREVIOUSLY PRESENTED) The method according to claim 14, wherein a change of ratio in the range transfer box (9) and an associated ratio change in the automatic transmission (8) take place automatically when a defined operating condition exists.
- 26. (PREVIOUSLY PRESENTED) The method according to claim 14, wherein a ratio change in the automatic transmission (8) is matched to the range change in the range transfer box (9) in such manner that essentially no change occurs in a transmission ratio of the multi-range transmission.
- 27. (NEW) A method for controlling a drivetrain (1) in a vehicle with a drive engine (2), a multi-range transmission (4) and a drive output, the multi-range transmission (4) consisting at least of an automatic transmission (8) and a downstream range transfer box (9), the method comprising the steps of:

10/522.363

shifting the downstream range transfer box (9) by means of shift elements (24, 25), when a transmission range of the range transfer box (9) is changed; synchronizing affirst shift element (24 or 25) of the range transfer box (9) that is to be engaged by controlling shift elements (A to E) of the automatic transmission (8), such that a range change in the range transfer box can be carried out at any vehicle speed; and

maintaining a first transmission ratio at substantially the same value as a second transmission ratio during the range change in the range transfer box (9) between a high and a low range of the range transfer box (9).

- 28. (NEW) The method for controlling a drivetrain (1) in a vehicle as set forth in claim 27 further comprising the steps of ensuring that a connection value of the rotation speed of the drive engine (2) for the second transmission ratio of the multi-range transmission remains essentially the same as a connection value for the first transmission ratio during the range change in the range transfer box (9) between the high and the low range of the range transfer box (9).
- 29. (NEW) The method for controlling a drivetrain (1) in a vehicle as set forth in claim 27 further comprising the steps of synchronizing the shift elements of the range transfer box (9) with the automatic transmission (8) independently of engine speed.